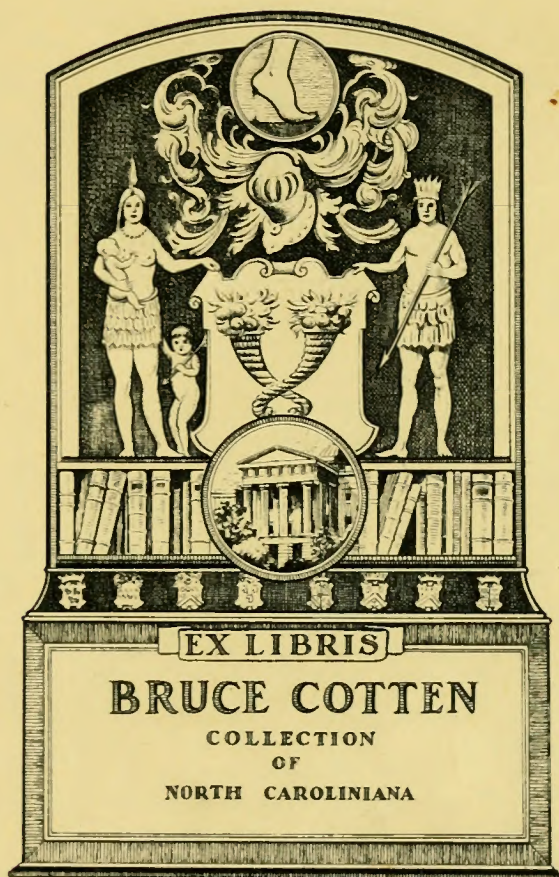




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Allen



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THIRD
ANNUAL REPORT
OF THE
PRESIDENT AND DIRECTORS
OF THE
ALBEMARLE AND CHESAPEAKE
Canal Company.

OFFICE:
OVER MERCHANTS' AND MECHANICS' EXCHANGE,
CORNER MAIN AND COMMERCE STREETS,
NORFOLK, VA.

NEW YORK:
HOSFORD & CO., STATIONERS AND PRINTERS.

.1858.

Albemarle and Chesapeake Canal Co.

INCORPORATED BY

VIRGINIA AND NORTH CAROLINA.

CAPITAL, \$1,500,000.

PRESIDENT.

MARSHALL PARKS.

CHIEF ENGINEER.

JOHN LATHROP.

SECRETARY AND TREASURER.

ADDISON M. BURT.

REPORT.

THE Board of Direction of the Albemarle and Chesapeake Canal Company respectfully submit the following as their Third Annual Report.

During the past year, the contractors have prosecuted the work with great energy and perseverance, having kept their force at work, *night and day*, at the most difficult points, in the hope of getting the whole line open by the present time. But the unforeseen difficulties arising from sunken logs and stumps, which from the first have so retarded the work, have not only continued undiminished, but in some places have been more formidable than ever; so that there still remains a small quantity of excavation to be done to complete the connection between the Albemarle and the Chesapeake. It is, however, expected that this connection will be made by the 1st of January next.

The length of the Company's line of navigation is about sixty-five miles.

Commencing in North Carolina, at the mouth of North River, a wide and deep tributary of Albemarle Sound, the line extends up that river to the canal; thence through the canal to Currituck Sound; thence northerly through Currituck Sound, and up the North Landing River to the Virginia section of canal; and thence westerly through said canal to the South-west Branch of Elizabeth River in the vicinity of Norfolk.

Of this line, the length of independent canal, exclusive of improvements of natural water courses, is 14.10 miles, divided into two sections as follows:

In N. C., from North River to Currituck Sound 5.65 miles.

“ Va., through Great Bridge Swamp 8.45 “

All the residue of the line consists of natural water courses, varying in width from 200 feet to several miles.

The distance yet to be excavated to complete the connection be

tween the Albemarle and the Chesapeake, is 3,600 feet, or less than two thirds of a mile ;* of which 1,600 feet are on the North Carolina section, and 2,000 feet on the Virginia section.

The work on the Lock is so far advanced that it will undoubtedly be completed by the end of February next.

The location of this, the only lock on the line, is at the junction of the canal with the Elizabeth River. It is the largest on the Atlantic coast, and the largest but two in the United States, being 220 feet long by 40 feet wide in the clear. It is of solid cut stone masonry, from the granite quarries of Maryland, constructed in the most substantial manner, with double sets of gates, and all the improvements known to modern engineering. Its foundation is placed sufficiently low to give a draft of eight feet water at lowest tides. Its capacity is sufficient to pass steam propellers carrying five hundred tons, and, being merely a tide lock, its lift is only half the rise or fall of the tide ; usually not exceeding two feet.

On the completion of the lock there will be a continuous channel through the entire line, and, if thought advisable, the line can be opened for smaller class vessels by the 1st of March next. And within the next twelve or fifteen months, the canal can be fully completed, and all the necessary improvement of the rivers and sounds accomplished ; so that there shall be a complete navigation with a depth of eight feet water, from the Albemarle to the Chesapeake.

In compliance with an application of the Company to the Treasury Department of the United States, an order has been issued to the officer in charge of the Fifth Lighthouse District, directing an examination and survey with reference to the placing of the necessary lights and buoys in the North River and in Currituck Sound. The Superintendent of the Coast Survey, also, has detailed a party to finish the survey of the upper part of Currituck Sound, and of the North Landing River ; which work, it is expected, will be completed in about sixty days.

The financial condition of the Company, at the close of the last fiscal year, was as follows :

* This was the distance on the 1st Nov. inst.

STATEMENT OF AFFAIRS OF THE ALBEMARLE AND
CHESAPEAKE CANAL CO., 1ST OCTOBER, 1858.

CAPITAL STOCK.

For Amount as of Charter.....	\$1,500,000 00
Subscribed by State of N. C.....	\$250,000 00
" " Currituck Co.....	44,000 00
" " Individuals	515,400 00
Balance undisposed of.....	690,600 00.. 1,500,000 00

RECEIPTS.

From State of North Carolina.....	\$250,000 00
" County of Currituck.....	44,000 00
" Individuals	327,207 00
For Interest.....	7,331 00
Included in Expenditure, but not yet paid	2,074 20.. 630,612 20

EXPENDITURE.

Paid for Construction of Canal to date, including Engineering Department and Salaries of Officers.....	\$569,382 41
Paid Contingent and Office Expenses..	10,724 20
" for Land and Land Damages....	16,183 65
" Taxes	41 46
" for Steamer Calypso.....	1,199 84
" difference on Currituck Co. Bonds received at par and sold at mar- ket price.....	2,000 00.. 599,531 56
Balance of Receipts, viz :	\$ 31,080 64
Currituck Co. Bonds....	31,000 00
Cash	80 64
	\$ 31,080 64

E. & O. E.

A. M. BURT, *Treasurer.*

NORFOLK, October 1st, 1858.

REPORT.

Although the Canal, when completed, will be much larger than at first contemplated, and the difficulties encountered in its construction have been of the most formidable character, it is now fully demonstrated that the cost, when completed and fully equipped for the large contemplated trade, will fall short of the authorized capital (\$1,500,000) at least a quarter of a million of dollars.*

The Company has no debt either funded or floating, and consequently no interest accruing against it for any purpose; all the funds for the construction of the Canal having been derived from Stock subscriptions at par.

Respectfully submitted,

By order of the Board,

MARSHALL PARKS, *President.*

A. M. BURT, *Secretary.*

Dated November 13th, 1858.

* The cost of the Chesapeake and Delaware Canal, fourteen miles long, was \$ 3,576,354 38. [See Reports of that Company.]

The cost of the Dismal Swamp Canal (which required *not half so much excavation* as the Albemarle and Chesapeake), was \$1,152,505 23. [See Reports of the D. S. Canal Company.]

APPENDIX.

As an appendix to the foregoing Report, the Board submit the following facts for the purpose of showing :

- 1st. The importance of this work as a public improvement, and
- 2nd. Its probable profits to the Stockholders.

This improvement completes a chain of inland navigation from New York, southward a distance of about 600 miles. By reference to the smaller of the accompanying maps, it will be seen that a continuous inland navigation from New York to Newbern in North Carolina is completed by means of only 71 miles of canal, viz :

Delaware and Raritan Canal in New Jersey	43 miles.
Chesapeake and Delaware Canal in Delaware.....	14 “
Albemarle and Chesapeake Canal in Virginia and N. C..	14 “

The Canal of this company, forming the southern link in the chain, opens an avenue, *free from the dangers of Cape Hatteras*, for the large and increasing trade of that fertile region lying upon Albemarle, Pamlico and Currituck Sounds and their tributary streams.

This region embraces about 12,500 square miles, or 8,000,000 acres of territory ; being larger than either of the States of Maryland, New Jersey, Massachusetts, Connecticut, New Hampshire, or Vermont, and larger than the combined area of Connecticut and Massachusetts, or of New Jersey and Delaware.

Albemarle, Pamlico and Currituck Sounds receive the waters of twenty-one rivers, and a great number of smaller navigable streams, altogether, watering upwards of twenty fertile counties, and affording about 1,800 miles of navigation.

The coasting tonnage of North Carolina exceeds two-thirds of her whole commerce; and nearly three quarters, or about 4,500 tons, of her whole coasting tonnage belong in this Albemarle and Pamlico county.* This is the tonnage of vessels *belonging* in the territory. The amount *employed* is much greater, as will be hereafter shown by the official returns of the light house keepers.

The waters of Eastern North Carolina are shut in from the ocean by a long narrow strip of land consisting of banks of sand thrown up by the waves; and for nearly two hundred miles, the only openings for sea-going vessels are two intricate and changing channels, known as Ocracoke and Hatteras Inlets. Their navigation is exceedingly dangerous, uncertain and expensive. The channels are so shallow that most of the vessels have to discharge cargo into lighters before they can pass the bars, and the weather must be very favorable to enable them to get to sea at all. The usual detention is from three to fifteen days; not unfrequently it is twenty to twenty-five days; and in some instances vessels have been detained there so long that they were obliged to return to port for a new supply of provisions.

The extra expenses caused by this detention, together with the necessary lighterage are estimated by those engaged in the trade, to amount to one dollar per ton of each cargo.

These inlets being south of Cape Hatteras, all vessels bound to the north, even if so fortunate as to get safely over the bars, are yet subjected to the perils of the most dangerous promontory on the coast of America. There is no place of refuge for vessels, between Ocracoke and the capes of Virginia, a distance of nearly 200 miles. And as these inlets are about 75 miles south of Albemarle Sound, all vessels from that sound, bound to northern ports, have to perform a voyage of 150 miles to get at sea upon the same parallel with their starting point, besides lightering over the bars of an intricate channel, and encountering the dangers of Cape Hatteras, where there are undoubtedly more shipwrecks than upon any other part of the American coast.

The extra insurance upon Ocracoke and Hatteras risks amounts to about three per cent., over and above the ordinary rates.

The amount annually *lost* in this trade, by reason of this extra

* U. S. Treasury Reports on *Commerce and Navigation*.

insurance, lighterage and detention is estimated at about half a million of dollars.

That these extra charges enhance the rate of freight and the cost of conveyance to market, is shown by the fact that freights from Wilmington, N. C., 120 miles south of Ocracoke, are considerably lower than from the towns of the Albemarle.

If this enhanced freight be estimated as a tax upon produce of six per cent. only, the actual positive *loss* directly chargeable to the defects of this navigation, amounts every year to more than three-quarters of a million of dollars, a sum only two-fifths less than the entire cost of the construction and equipment of the new canal.

These heavy burdens have long demanded a more suitable outlet for this trade; and for the last forty years, efforts have been made to induce the General or State Government to reöpen Roanoke inlet near Nag's Head. At this point, and also at another near Crow Island in Currituck Sound, where now lie high drifted banks of sand, were once navigable inlets; and it has been thought by many that these could be reöpened. Within the last three years the experiment has been tried.

Congress made an appropriation, and the reöpening of Roanoke Inlet was undertaken under the direction of the War Department. After four-fifths of the appropriation had been expended, there was "scarcely a trace to be seen of what had been done, the drifting sand filling in the trench as fast as it was excavated by the dredging machine. In fact the machine was very near being imbedded in the sand, it filling in so rapidly behind it.* Under these circumstances the able officers in charge of the work, (Lieut. Whiting, and subsequently Brevet Col. Turnbull, U. S. Engineers), pronounced the scheme impracticable, "short of an enormous expenditure altogether disproportionate to the object,"* and advised its abandonment as a wanton waste of the public money. Col. Turnbull further reported as an additional reason for abandoning it, that the work was no longer even desirable, inasmuch as the Albemarle and Chesapeake Canal would "*obviate all necessity of a communication with the sea through Nag's Head.*"*

The scheme of reöpening the closed inlets, was therefore abandoned as impracticable and unnecessary. Even were it practicable, the

* Report of Secretary of War for 1857, p. 347.

cost would be enormous, at least \$5,000,000, according to Col. Turnbull's estimate,* and after all, there would be no certainty of its remaining permanent. On the contrary it is highly probable that as the same causes continue in force, the inlets would in time be again filled up. A similar fate undoubtedly awaits Ocracoke and Hatteras at no distant day, since it is notorious that their channels have been gradually shoaling for several years; and they must in time be wholly closed up, or at all events become impassable for vessels, while the waters of the sounds will force their way to the ocean through the sands still further to the south.

The foregoing facts, we think, sufficiently demonstrate the importance of this work as a public improvement.

THE VALUE OF THE WORK AS A BUSINESS ENTERPRISE.

The profits to the Stockholders will depend first on the amount of traffic, and secondly upon the expenses of maintenance and management.

As to the first, the Board confidently expect *the entire northward trade of the three Sounds and their tributaries.*

On this point there seems to be no room for doubt; for it is inconceivable that a navigator should be willing to encounter the dangers, the vexatious delays, and the extra expenses of Ocracoke and Hatteras, going 150 miles out of his way, and losing from three days to three weeks time, when a perfectly safe and far cheaper and speedier way is open to him. The canal being specially designed for steam towing, a vessel by this line can reach Chesapeake Bay, and the ocean through the Capes of Virginia, in twenty-four hours from the Albemarle; and may make her voyage to a northern port and back home again in the same time that she would be detained at the Inlets getting over the bars.

No argument can be necessary to prove that trade will prefer a route, at once *direct, certain, cheap, and safe*, to others that are in all respects the very opposite,—*indirect, uncertain, expensive, and dangerous.*

Another important consideration is that northward bound vessels arriving by this line in the Chesapeake, have here a choice whether

* Report of Secretary of War for 1857, p. 347.

to go up the Bay and through the Canals, or to go by sea from the Capes of Virginia; either route being free from danger, and from all expenses arising from lighterage, detention, or extra insurance.

These considerations, we think, fully warrant us in counting upon the whole of the Albemarle and Pamlico northward trade, together with all the increase naturally consequent upon new and increased facilities. Let us therefore inquire into the probable amount of this trade, and of its profits to the company.

The soil of this region is of very great fertility, yielding abundant crops of corn, wheat, potatoes, peas, and the various other agricultural products. Cotton is grown to a considerable extent, and its production is every year increasing. The crop, for the present year is estimated 50,000 bales. And it is well known that a very large proportion of the naval stores used in the United States are produced in this region. The quantity of lumber, timber and staves is very large; and the number of shingles produced here, is immense. The fisheries also are the most productive in the Union.

Of the amount of shipping employed in this trade an approximate idea may be formed from the official returns of the light keepers; who are required to keep daily accounts and to make quarterly returns of the number and class of vessels passing their respective stations.

Till within the last two or three years, the principal opening to the ocean was Ocracoke Inlet. For instance, during the year 1855, there were upwards of 5,250 passages through Ocracoke,* while the estimated number at Hatteras was only about 1750; but lately Ocracoke channel has become so difficult that a large majority of the vessels now use Hatteras Inlet in preference. There being no Light at this inlet, we are without official information as to the number of passages through it; but we are assured by a Government officer,† on the authority of the Pilots in these sounds, that fully three-fourths of the sea-going vessels now pass via Hatteras.

As to the number of these vessels, we can get a sufficiently correct idea by aggregating the returns from the Lights at *Croatan* and *N. W. Royal Shoal*, since all vessels from the Albemarle, whether for Ocracoke or Hatteras, must pass the former, while most of those from a

* Lighthouse returns for 1855.

† Capt. Crawley, overseer of Buoys in North Carolina.

southerly direction, pass the latter. We are, however, informed by the same officer that a considerable number of vessels from Hyde county, going to Hatteras, do not pass sufficiently near any Light to be recorded.

The returns from the two above mentioned stations for the present year (1858), foot up as follows:

First Quarter.....	1,229
Second "	1,342
Third "	1,298
<hr/>	
Total for three quarters....	3,869

To these returns it is safe to add 25 per cent. for vessels passing in the night, or otherwise unseen by the light keepers. Add 25 per cent. to the above, and we have 4,836 vessels for the first three quarters of the year; and assuming that the fourth quarter will average with the other three, we can add 1,612 more, making a total of 6,448 for the year. Supposing them to average 125 tons each, the result is a total of 806,000 tons. The proportion of this that goes northward is estimated to be fully three quarters, or 604,500 tons.

This is more than double the tonnage of the Delaware and Raritan Canal, other than its coal tonnage, upon which that Company received for the year 1857 tolls amounting to \$128,586 25.*

It is more than two thirds the tonnage of the Welland Canal for 1857; upon which the tolls amounted to \$232,437 18;† and it is more than two thirds the tonnage, other than coal, of the Chesapeake and Delaware Canal, where the tolls for the year 1857 were \$229,081 33.‡

If, therefore, our tolls be fixed at the same rates as those of the Delaware and Raritan Canal Company, they should amount to upwards of \$257,000 per year.

At the rates charged upon the Welland Canal, the amount would

* Information obtained at the Delaware and Raritan Canal Office, Princeton, N. J.

† Information obtained from the Welland Canal Office, St. Catharines, Canada West.

‡ Information deduced from the Annual Report of the Chesapeake and Delaware Canal Company, for the year ending June 1, 1857.

be about \$155,000 per year; and at the Chesapeake and Delaware rates, about \$152,000.

To these estimates must be added the business that has heretofore passed through the Dismal Swamp Canal; inasmuch as that canal is so notoriously insufficient for the wants of the trade that its entire through business must inevitably be diverted to the new route. The small capacity of that canal, its insufficient supply of water, the number and diminutive size of its locks, and, above all, its connection with the dreaded "Moccasin Track," requiring sometimes eight to ten days to make a trip of fifty miles, constitute objections to that route too serious to admit of any doubt on this point.

The tolls received by that company for several years, have amounted to upwards of \$40,000 per year. *

The foregoing estimates, it will be observed, are based only upon the northward trade of the Albemarle and Pamlico country; which is estimated at three fourths of the whole. But we see no reason to doubt that even southward bound vessels can ordinarily get to sea through this line, and by the capes of Virginia, *in less time* than by the Ocracoke or Hatteras route, to say nothing of diminished expenses and entire freedom from danger. Should this expectation be realized, it would increase the amount of tonnage to about the same as that of the Welland Canal; upon which, as we have seen, the tolls for 1857 amounted to \$232,437 18. At Delaware and Raritan rates, the amount would be upwards of \$334,000 per year. This, it must be remembered, is from tolls alone.

But in addition to tolls, this Company is authorized to derive revenue from *towage*; and the Canal having been constructed with sole reference to steam towing, it is expected that the receipts from this source will be nearly, if not quite, equal to those from tolls.

As to the expenses of maintaining and managing the canal, when completed, this line will have vastly the advantage over any other canal in the United States, or so far as we know, in the world. The water surface being every where lower than the adjoining country, there are no embankments, and of course can be no breaks; there are no aqueducts, dams, waste weirs, culverts, nor guard gates; no towing path; only three bridges; and but one lock. The lock being

* Annual Reports of the Dismal Swamp Canal Company to the Board of Public Works of Virginia.

built of solid masonry, in the most substantial manner throughout, there is nothing about it that can ever fail or need repair but the gates, and these being made of the best materials the country affords, and in the best manner, will not probably require any repairs for years. The location of the canal is such that no damages can ever occur from freshets; nor, on the other hand, can there ever be any difficulty arising from want of water; for the canal is in fact a mere *extension of the natural water courses* with which it connects, (its level being fixed at mid tide), and it will have for feeders the Albemarle and Pamlico Sounds at one end, the Elizabeth River and Chesapeake Bay at the other, and through them, the Atlantic Ocean at both. Under these circumstances, there can be no doubt that the necessary expenses of maintaining this canal, in comparison with others of similar magnitude, will be unprecedentedly small.

The Company also hold the tract of land, consisting of about 6,000 acres, traversed by the Virginia section of the canal; the whole of which is covered with valuable wood and timber. The quantity of wood is estimated at 250,000 cords; worth, standing, one dollar per cord. And if the opening of the canal shall have the effect of draining this tract, as in all probability it will, the land when cleared will be of the most valuable description for farming purposes.

Taking as a basis of calculation the estimated business done upon the Ocracoke and Hatteras routes, together with the known business of the Dismal Swamp Canal, the following table exhibits a fair estimate of the tolls that may be expected to be received upon the new route, when completed and in full operation.

EXPORTS.	QUANTITY.	TOLLS.
Cotton, bales.....	40,000...	\$10,000
Fish, barrels.....	50,000....	5,000
Naval Stores, barrels.....	100,000....	6,000
Corn, bushels.....	2,500,000....	25,000
Wheat, do.	500,000....	5,000
Peas, do.	50,000....	500
Potatoes, do.	100,000....	2,000
Timber, cubic feet.....	2,000,000....	20,000
Lumber, sup. do.	1,000,000....	10,000
Staves.....	10,000,000....	10,000
Shingles.....	75,000,000....	25,000
Wood, cords.....	100,000....	25,000
Fresh fish and vegetables....	2,500
Sundries.....	15,000
Tolls on Exports.....		\$161,000
Imports.....		24,000
Total tolls for year.....		\$185,000
Estimated expense of maintain ing canal....		20,000
Net revenue for year.....		\$165,000

This estimate is based upon the trade now actually existing, without taking into consideration the increase naturally consequent upon new and increased facilities for trade. Taking this into account, it is safe to assume that the revenue will, in a few years, reach \$250,000 per year.

The authorized capital of the Company is \$1,500,000, in shares of \$100 each. The charter is unlimited in duration, and extremely liberal in its provisions. No personal liability whatever attaches to any stockholder; no maximum limit is set to the rates of tolls; and in addition to tolls, revenue may be derived from towage, land, lumber and transportation, the rates of charges for these being absolutely discretionary with the Company.

The State of North Carolina has subscribed \$250,000 to the

capital stock, besides binding herself, on the opening of navigation, to make a further subscription of \$100,000. Thus the State may be considered a stockholder, virtually, to the amount of \$350,000; of which she has already paid \$250,000 in her six per cent. coupon bonds.

The Board of Direction consists of a President and nine Directors; of whom three directors are appointed by the Governor of North Carolina, and six directors, together with the president, are annually elected by the stockholders.

REPORT

On the number and class of vessels passing in and out of the harbor and the amount of cargo loaded and unloaded during the year 1900

VESSELS		CARGO	
Number	Tonnage	Value	Quantity
100	1000	1000	1000
200	2000	2000	2000
300	3000	3000	3000
400	4000	4000	4000
500	5000	5000	5000
600	6000	6000	6000
700	7000	7000	7000
800	8000	8000	8000
900	9000	9000	9000
1000	10000	10000	10000

At a meeting of the Board of Directors of the Harbor Commission, held on the 10th day of January, 1901, the following resolution was adopted:

Resolved, That the Harbor Commission be and they are authorized to cause to be printed and distributed to the members of the Board of Directors a report of the Harbor Commission for the year 1900.

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ALBEMARLE CHESAPEAKE



CONNECTING CHESAPEAKE BAY
WITH CURRITUCK, ALBEMARLE AND PAMLICO SOUNDS
AND THEIR TRIBUTARY STREAMS

JOHN LATHROP, CIVIL ENGINEER

1858

ALBEMARLE CANAL, FIRST
OFFICE
STOKELEY, N.C.



EXPLANATIONS.

Albemarle & Chesapeake Canal

Length of Virginia Canal	8 1/2 Miles
North Carolina Canal	5 1/2
Canal and River Navigation	70
One Lock	220 Feet
Width	90

REPORT

On the number and class of vessels passing in and out of the harbor of New York during the year ending June 30, 1900.

VESSELS		Tonnage		Passengers	
Foreign	Domestic	Foreign	Domestic	Foreign	Domestic
1,234	5,678	12,345	67,890	1,234	5,678
567	2,345	6,789	34,567	567	2,345
345	1,234	4,567	23,456	345	1,234
234	987	3,456	18,765	234	987
123	654	2,345	12,345	123	654
98	432	1,234	7,654	98	432
76	321	987	5,432	76	321
54	210	654	3,210	54	210
32	109	321	1,543	32	109
21	87	210	1,098	21	87
10	65	109	876	10	65
8	43	87	543	8	43
6	32	65	432	6	32
4	21	43	321	4	21
3	10	32	210	3	10
2	8	21	109	2	8
1	6	10	87	1	6
0	4	8	65	0	4
0	3	6	43	0	3
0	2	4	32	0	2
0	1	3	21	0	1
0	0	2	10	0	0
0	0	1	8	0	0
0	0	0	6	0	0
0	0	0	4	0	0
0	0	0	3	0	0
0	0	0	2	0	0
0	0	0	1	0	0
0	0	0	0	0	0

By order of the Board of Harbor Commissioners,
 J. J. [Name], Secretary.

Printed by the Government Printing Office, Washington, D.C., 1901.

A statement of the receipts and disbursements of the Harbor Commissioners for the year ending June 30, 1900, is appended to this report.

W. T. [Name], Chairman.
 [Name], Secretary.



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